

Abstract of the Disclosure

The present invention relates to a method for fabricating a metal-oxide semiconductor (MOS) transistor
5 having a gate electrode with a stack structure of a polysilicon layer, a tungsten nitride barrier layer and a tungsten layer. According to the present invention, a depth from a lastly deposited nitride layer to a bottom surface of a trench is shallower, and thereby decreasing incidences of a
10 void generation. Also, the present invention provides an advantage of an elaborate manipulation of well and channel dopings by performing ion-implantations with two different approaches. Furthermore, it is possible to enhance device characteristics by decreasing gate induced drain leakage
15 (GIDL) currents and improving a capability of driving currents. This decrease of the GIDL currents and the improved driving current capability are obtained by forming the gate oxide layer with different thicknesses.